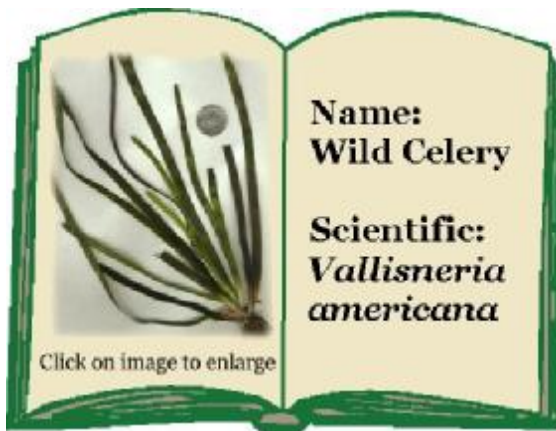


## Wild Celery Fact Sheet



### Description:

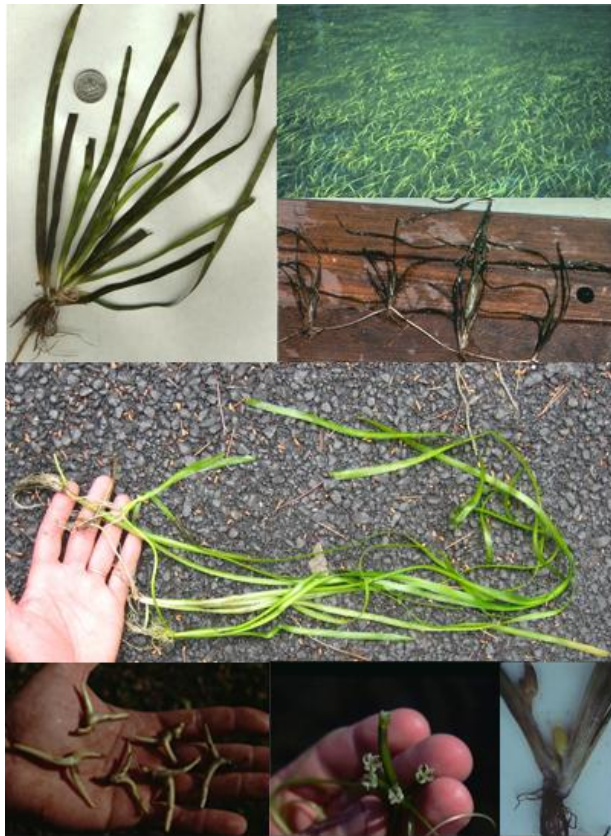
*Vallisneria americana* is often called tapegrass, freshwater eelgrass, or wild celery, even though it is not related to edible garden celery. It is a **perennial** plant and is found in fresh water and slightly brackish water. It has **submerged** or floating leaves that are ribbon-shaped and may be as much as two meters long, depending on the depth of the water. The leaves all grow in clusters (a **rosette**) from

the base of the plant. The leaves have finely toothed (**serrulate**) edges, a blunt rounded tip and are approximately 2 cm wide. A light green stripe runs down the center of the leaves; this stripe is easier to see if the leaf is held up to the light and helps to identify the plant. The plants grow from nodes along the creeping underground **rhizome**. Each plant has finely branching (**fibrous**) roots.

Wild celery can sometimes be confused with eelgrass (*Zostera marina*). However, eelgrass has **alternately** arranged leaves which lack the light green stripe and prefers high salinity water. Because wild celery prefers freshwater or low salinity water, the two species are usually not found in the same location.

### Distribution:

*Vallisneria americana* is found mainly in eastern North America, as far north as Nova Scotia, west to North Dakota and south to the Gulf of Mexico. It has recently been reported as far west as Arizona, New Mexico and Washington. It is also found in the Middle East, Asia, the South Pacific and Central and South America. In the Chesapeake Bay it is mainly found in freshwater, although it is sometimes found in brackish water (up to 12-15 ppt). It has been found in both moving and still water.

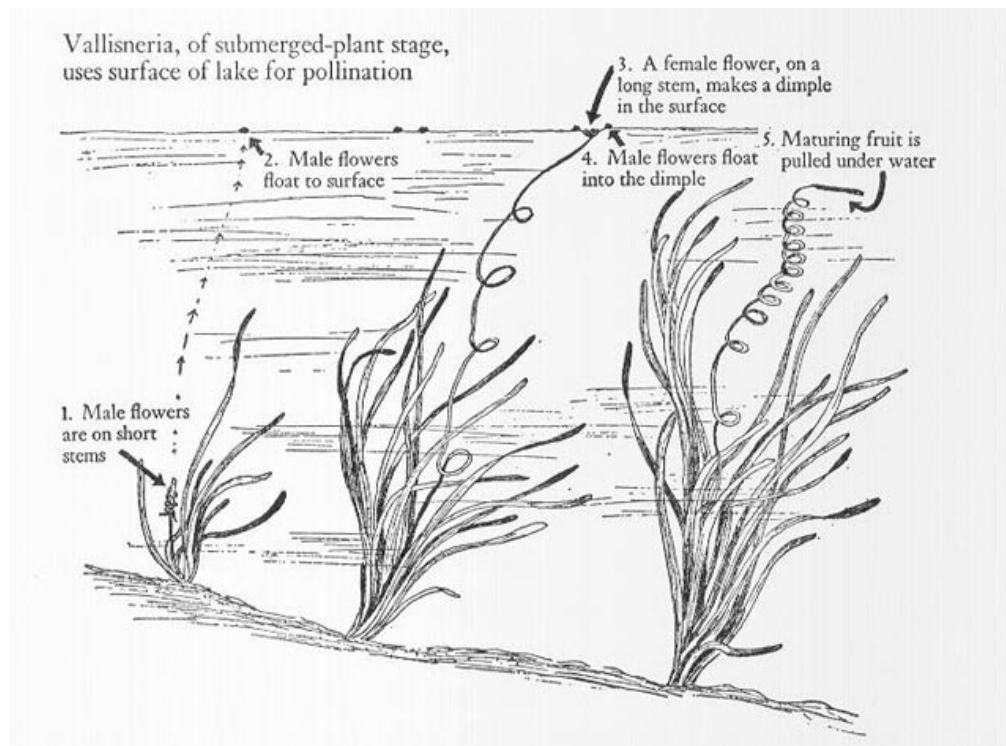


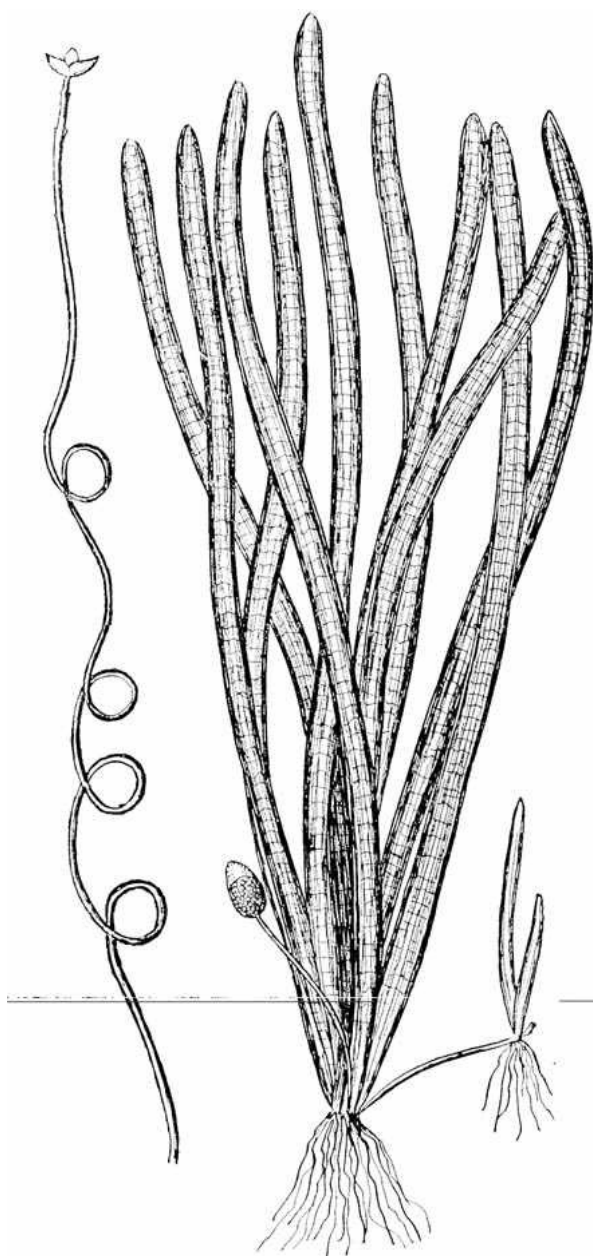
### Reproduction:

Wild celery is able to reproduce both sexually and asexually.

**Sexual:** Wild celery is a **dioecious** plant, meaning that male and female flowers are on separate plants. Wild celery flowers from July through September. The female, or **pistillate**, flower is located on a long flower stalk, called a **peduncle**, that grows long enough to allow the flower to reach the water's surface. This is necessary for pollination. The female flowers have 3 **sepals** and 3 white petals. The male, or **staminate**, flowers are crowded together and enclosed in an egg-shaped **spathe** on a short peduncle at the base of the plant. Each spathe consists of about 2,000 male flowers.

When mature, the male flowers, which contain pollen, break free and float to the water surface. Wind and water currents help spread the pollen where it may come into contact with a female flower. Once fertilization is complete, the stalk of the female flower coils up, pulling the developing fruit underwater. A long pod is produced that contains many small dark seeds. In late summer or early fall, some of these fruit pods break open and release a jelly-like substance containing the seeds. This mass settles to the bottom close to the parent plant. Other fruit pods do not open until later when the plants have broken free and floated away. This helps scatter the seeds.





**Asexual:** In the late summer, *V. americana* forms winter buds which remain dormant in the substrate over the winter. In the spring, these buds begin to grow longer and send out a **stolon** to the surface of the substrate, much like a strawberry plant sends out “runners”. A new rosette of ribbon-like leaves grows from this stolon.

During the growing season, each plant can send out as many as 20 rhizomes that grow next to the parent plant. In late summer rosette production stops and some rosettes form winter buds. After winter bud formation, the remaining stem tissue breaks free of the substrate and floats free until it decomposes.

**Importance:**

Wild celery is one of the most valuable SAV species in the Chesapeake Bay. It is important because of its food value for many species of waterfowl. In fact, the scientific name of the canvasback duck, *Aythya valisineria*, shows this duck’s dependence on *Vallisneria americana*. Canvasback ducks and other diving ducks depend on the winter buds for food during migration and over the winter. Wild celery is also a source of food for a large number of aquatic invertebrates and fishes, and for other birds and mammals that visit aquatic habitats. All parts of the plant may be eaten.

In addition, the roots, rhizomes and stolons help reduce erosion and provide shelter for **benthic algae** and invertebrates. The leaves also provide shelter, support and an increased oxygen supply for aquatic animals. *V. americana* also acts as a nutrient buffer by using dissolved nitrogen and phosphorus for growth. This helps reduce algae blooms by making the nutrients unavailable for the algae.



**Vocabulary:**

**Algae (plural)** – a group of simple aquatic organisms that may be single celled or multi-celled. They contain chlorophyll, like plants, but they are considered “simple” because they do not have leaves, roots or flowers.

**Alternately** – not arranged in pairs; leaves alternate direction along the stem

**Asexual reproduction** – in plants, reproduction by cell division rather than by seeds; also called vegetative reproduction

**Benthic** – living on the floor of the ocean or Bay

**Dioecious** – male and female flowers occurring on separate plants

**Fibrous** – finely branching

**Peduncle** – flower stalk

**Perennial** – a plant that lives more than two years

**Pistillate** – containing pistils (the seed-bearing organ of a flower) – female flower

**Rhizome** – horizontal stem either lying on the sediment surface or buried; usually with roots and new shoots at stem nodes

**Rosette** – a circular cluster of leaves

**Sepals** – the outer leaves of a flower

**Serrulate** – finely toothed

**Sexual reproduction** – in plants, reproduction by means of seeds

**Spathe** – a large specialized leaf that surrounds a flower or group of flowers

**Staminate** – containing stamens (the pollen-bearing organ of a flower) –



Example of alternately arranged leaves.



## Wild Celery

### Read for Understanding Questions:

1. Describe the shape of wild celery leaves.
2. How can you tell eelgrass and wild celery apart?
3. You are growing wild celery in a large 10 gallon tub. Should the water be still or moving? Support your answer with information from the Fact Sheet.
4. The scientific name of wild celery is *Vallisneria americana*. Why might this name not be really accurate?
5. How does the pollen reach the pistillate flowers?
6. Wild celery reproduces asexually by stolons or “runners”. What land plant also reproduces this way?



## Wild Celery

### Read for Understanding Answers:

1. Describe the shape of wild celery leaves. *Wild celery has long, ribbon shaped leaves that may be as much as 2 meters long. They grow in clusters from the base of the plant. They have finely toothed edges, a rounded tip and a light green stripe up the center.*
2. How can you tell eelgrass and wild celery apart? *Wild celery leaves grow in clusters and have a light green stripe up the center. Eelgrass has alternate leaves and no light green stripe. Wild celery prefers fresh or slightly brackish water; eelgrass prefers higher salinity water.*
3. You are growing wild celery in a large 10 gallon tub. Should the water be still or moving? Support your answer with information from the Fact Sheet. *Wild celery can grow in either still or moving water so it should not matter whether the water in the tub is moving or not.*
4. The scientific name of wild celery is *Vallisneria americana*. Why might this name not be really accurate? *The americana part is not really accurate because wild celery is also found in the Middle East, Asia and the South Pacific.*
5. How does the pollen reach the pistillate flowers? *The pistillate flowers grow on a long stalk that allows them to reach the water surface. The male flowers break loose and float to the surface too. Then wind or water currents spread the pollen to the pistillate flowers.*
6. Wild celery reproduces asexually by stolons or “runners”. What land plant also reproduces this way? *Strawberries reproduce by runners.*

